FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS, LIFESCI' ENTERED AT 14:17:57 ON 06 FEB 2001

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L1      106607 S REVERSE(W)TRANSCRIPTASE?
L2          25 S ASLV AND L1
L3           5 S L2 AND (PURIF? OR ISOLAT?)
L4           3 DUP REM L3 (2 DUPLICATES REMOVED)
L5           0 S UNITS AND L4
L6           1 S L4 AND (NANOGRAM? OR MILLIGRAM? OR NG OR MG)
L7           1 S UNTITS(W)MG
L8       10647 S UNITS(W)MG
L9          24 S L1 AND L8
L10          0 S L9 AND ASLV
L11         11 DUP REM L9 (13 DUPLICATES REMOVED)
L12        190 S AMV(W)RT
L13          0 S L12 AND L8
L14          4 S AVAIN (W) RETROVIRUS
L15          0 S L14 AND L8
L16       1850 S AVIAN (W) RETROVIRUS
L17        195 S L16 AND L1
L18          0 S L17 AND L8
L19        110 S L17 AND ACTIV?
L20          1 S L19 AND UNIT?
L21          0 S L2 AND (SPECIFIC(W)ACTIV?)
L22        289 S L1 AND (AVIAN(W)SARCOMA )
L23          0 S L22 AND L8
L24          0 S "AVAIN SARCOMA LEUKOSIS VIRUS?"
L25        147 S "AVIAN SARCOMA LEUKOSIS VIRUS"
L26         26 S L25 AND (ISOLAT? OR PURIF?)
L27          0 S L26 AND L8
L28          0 S L26 AND (SPECIFIC(A)ACTIV?)
L29         36 S L25 AND L1
L30         30 S L29 AND ACTIV?
L31          0 S L30 AND UNIT?
L32         11 DUP REM L30 (19 DUPLICATES REMOVED)
L33          1 S L29 AND (MG OR NG OR NANOGRAM? OR MILLIGRAM?)
L34          1 S L30 AND (MG OR NG OR NANOGRAM? OR MILLIGRAM?)
L35          8 S L30 AND SUBUNIT?
L36         20 S RT(A)(UNIT)
L37         46 S RT(A)(UNIT?)
L38          0 S L30 AND L37
L39          0 S L11 AND L25
L40        286 S L25 OR ASLV
L41          0 S L40 AND L8
L42          5 S L40 AND HOMOGENE?
L43          1 DUP REM L42 (4 DUPLICATES REMOVED)
L44          0 S L43 AND L8
L45          0 S L34 AND (SPECIFIC(A)ACTIV?)
L46          0 S L43 AND (SPECIFIC(A)ACTIV?)
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DN 88230595
TI Properties of **avian sarcoma-leukosis virus** pp32-related pol-endonucleases produced in Escherichia coli.
AU Terry R; Soltis D A; Katzman M; Cobrinik D; Leis J; Skalka A M
CS Roche Research Center, Hoffmann-La Roche Inc., Nutley, New Jersey 07110.
NC CA38046 (NCI)
T32-GM-07250 (NIGMS)
CA-06927 (NCI)
SO JOURNAL OF VIROLOGY, (1988 Jul) 62 (7) 2358-65.
Journal code: KCV. ISSN: 0022-538X.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals; Cancer Journals
EM 198809
AB The gag-pol precursor protein of the **avian sarcoma-leukosis virus** is processed into three known pol-encoded mature polypeptides; the 95- and 63-kilodalton (kDa) beta and alpha subunits, respectively, of reverse transcriptase and the 32-kDa pp32 protein. The pp32 protein possesses DNA endonuclease activity and is produced from the precursor by two proteolytic cleavage events, one of which removes 4.1 kDa of protein from the C terminus. A 36-kDa protein (p36pol) which retains this C-terminal segment is detectable in small quantities in virions. We have constructed Escherichia coli plasmid clones that express the C-terminal domains of pol corresponding to pp32 and p36. These proteins have been purified by column chromatographic methods to near **homogeneity**. No significant differences could be detected in the enzymatic properties of the bacterially produced p32pol and p36pol proteins. Both possess DNA endonuclease activity and, like the pp32 protein isolated from virions, can cleave near the junction of two tandem **avian sarcoma-leukosis virus** long terminal repeats in double-stranded supercoiled DNA substrates. In the presence of Mg2+, both p32pol and viral pp32 cleave either strand of DNA 2 nucleotides 5' to the junction.
CT Check Tags: Support, Non-U.S. Gov't; Support, U.S. Gov't, P.H.S.
Amino Acid Sequence
Base Sequence
*DNA-Directed DNA Polymerase: GE, genetics
DNA-Directed DNA Polymerase: ME, metabolism
DNA, Superhelical: ME, metabolism
DNA, Viral: ME, metabolism
*Endodeoxyribonucleases: GE, genetics
Endodeoxyribonucleases: ME, metabolism
Escherichia coli: GE, genetics
Molecular Sequence Data
Protein Processing, Post-Translational
*Recombinant Proteins: GE, genetics
Recombinant Proteins: ME, metabolism
*Retroviridae Proteins: GE, genetics
Retroviridae Proteins: ME, metabolism
*Sarcoma Viruses, Avian: EN, enzymology
Sarcoma Viruses, Avian: GE, genetics
CN EC 2.7.7.7 (DNA-Directed DNA Polymerase); EC 3.1.- (Endodeoxyribonucleases); 0 (avian retrovirus proteins); 0 (DNA, Superhelical); 0 (DNA, Viral); 0 (Recombinant Proteins); 0 (Retroviridae Proteins)

L11 ANSWER 8 OF 11 HCAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1982:81758 HCAPLUS
DOCUMENT NUMBER: 96:81758
TITLE: Purification of **reverse transcriptase** from avian myeloblastosis virus (AMV)
AUTHOR(S): Qi, Defang; Pan, Tiecheng; Feng, Zongming; Qian, Bin; Yu, Weiyuan
CORPORATE SOURCE: Shanghai Inst. Biochem., Acad. Sin., Shanghai, Peop. Rep. China
SOURCE: Shengwu Huaxue Yu Shengwu Wuli Xuebao (1981), 13(3), 275-81
CODEN: SHWPAU; ISSN: 0582-9879
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB **Reverse transcriptase** was purified .apprx.600-fold from AMV. The method employed affinity chromatog. on a column of covalently linked heparin-agarose followed by concn. of the enzyme by dialysis against 50% glycerol in phosphate buffer. This procedure could be completed within 1.5 days. The purified **reverse transcriptase** showed sp. activity of 12,000 **units/mg** protein and enzyme yield of 30,000 units/g AMV, and was free of detectable DNase and RNase. Conditions affecting the enzyme activity, e.g. metal ions, template specificity, and the length of primers were also studied and discussed.

L11 ANSWER 1 OF 11 MEDLINE DUPLICATE 1
ACCESSION NUMBER: 1999292945 MEDLINE
DOCUMENT NUMBER: 99292945
TITLE: Barley coleoptile peroxidases. Purification, molecular cloning, and induction by pathogens.
AUTHOR: Kristensen B K; Bloch H; Rasmussen S K
CORPORATE SOURCE: Plant Biology and Biogeochemistry Department, PBK-301, Riso National Laboratory, P.O. Box 49, DK-4000 Roskilde, Denmark.. brian.kristensen@risoe.dk
SOURCE: PLANT PHYSIOLOGY, (1999 Jun) 120 (2) 501-12. Journal code: P98. ISSN: 0032-0889.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199910
ENTRY WEEK: 19991002
AB A cDNA clone encoding the Prx7 peroxidase from barley (Hordeum vulgare L.) predicted a 341-amino acid protein with a molecular weight of 36,515. N- and C-terminal putative signal peptides were present, suggesting a vacuolar location of the peroxidase. Immunoblotting and **reverse-transcriptase** polymerase chain reaction showed that the Prx7 protein and mRNA accumulated abundantly in barley coleoptiles and in leaf epidermis inoculated with powdery mildew fungus (Blumeria graminis). Two isoperoxidases with isoelectric points of 9.3 and 7.3 (P9.3 and P7.3, respectively) were purified to homogeneity from barley coleoptiles. P9.3 and P7.3 had Reinheitszahl values of 3.31 and 2.85 and specific activities (with 2,2'-azino-di-[3-ethyl-benzothiazoline-6-sulfonic acid], pH 5.5, as the substrate) of 11 and 79 **units/mg**, respectively. N-terminal amino acid sequencing and matrix-assisted laser desorption/ionization time-of-flight mass-spectrometry peptide analysis identified the P9. 3 peroxidase activity as due to Prx7. Tissue and subcellular accumulation of Prx7 was studied using activity-stained isoelectric focusing gels and immunoblotting. The peroxidase activity due to Prx7 accumulated in barley leaves 24 h after inoculation with powdery mildew spores or by wounding of epidermal cells. Prx7 accumulated predominantly in the epidermis, apparently in the vacuole, and appeared to be the only pathogen-induced vacuolar peroxidase expressed in barley tissues. The data presented here suggest that Prx7 is responsible for the biosynthesis of antifungal compounds known as hordatines, which accumulate abundantly in barley coleoptiles.

L11 ANSWER 2 OF 11 HCAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1999:98778 HCAPLUS
DOCUMENT NUMBER: 130:278414
TITLE: A study of the purification and enzyme activity of the recombinant HIV - 1 **reverse transcriptase**
AUTHOR(S): Ke, Yuehai; Wang, Jiaquan; Zeng, Yi

CORPORATE SOURCE: Institute of Virology, Chinese Academy of Preventive Medicine, Beijing, 100052, Peop. Rep. China
SOURCE: Bingdu Xuebao (1998), 14(4), 315-321
CODEN: BIXUEA; ISSN: 1000-8721
PUBLISHER: Bingdu Xuebao Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB HIV-1 **reverse transcriptase** was expressed in E. coli DH5.alpha. using an expression plasmid RP66, derived from pBV220. The engineered bacteria were cultivated in the fermentator and induced to produce the insol. inclusion body formation of the non-active RT. After inclusion body clarification, solubilization and refolding, the further purifn. step was investigated by HIC (hydrophobic - interaction chromatog.) and anion - exchange chromatog. (Q-sepharose). Meanwhile, the whole purifn. steps were monitored by RP - HPLC. Finally the sol. active RT (purifn. level about 95 %, specific enzyme activity 9.75.times.105 **units/mg**) was obtained.

L11 ANSWER 3 OF 11 MEDLINE DUPLICATE 2
ACCESSION NUMBER: 94053388 MEDLINE
DOCUMENT NUMBER: 94053388
TITLE: Characterization of recombinant human neuron-specific enolase and its application to enzyme immunoassay.
AUTHOR: Aoki T; Kimura M; Kaneta M; Kazama H; Morikawa J; Watabe H
CORPORATE SOURCE: Department of Biochemistry, Faculty of Pharmaceutical Sciences, Higashi-Nippon-Gakuen University, Hokkaido, Japan..
SOURCE: TUMOUR BIOLOGY, (1993) 14 (5) 261-70.
Journal code: TUB. ISSN: 1010-4283.
PUB. COUNTRY: Switzerland
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals
ENTRY MONTH: 199402

AB Human gamma-enolase cDNA prepared by **reverse transcriptase**-polymerase chain reaction was cloned into the Escherichia coli expression vector pKK223-3. The resulting plasmid, pHTK503, expressed human gamma-enolase as a 46-kDa protein in SDS-PAGE, and in the cells as the active gamma gamma form (designated as recombinant human NSE; R-NSE). R-NSE was purified from E. coli by several chromatographic elutions. Finally, 6.0 mg of R-NSE from 8.1 g cells was purified with a specific activity of 86 **units/mg** protein. The structural properties of R-NSE were compared with the NSE purified from human brain tissue (B-NSE). The biochemical and enzymatic characteristics were essentially the same, except for the isoelectric point (4.5 for B-NSE and 4.7 for R-NSE). In an NSE immunoassay system, R-NSE and standard NSE were almost equal in reactivity to the anti-NSE antibody. These results indicate that R-NSE can be used as standard assay material.

L11 ANSWER 4 OF 11 MEDLINE DUPLICATE 3
ACCESSION NUMBER: 89340495 MEDLINE
DOCUMENT NUMBER: 89340495
TITLE: Co-expression of the subunits of the heterodimer of HIV-1 **reverse transcriptase** in Escherichia coli.
AUTHOR: Muller B; Restle T; Weiss S; Gautel M; Sczakiel G; Goody R S

CORPORATE SOURCE: Abteilung Biophysik, Max-Planck Institut fur Medizinische
Forschung, Heidelberg, Federal Republic of Germany.
SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1989 Aug 25) 264 (24) 13975-8.
Journal code: HIV. ISSN: 0021-9258.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals
ENTRY MONTH: 198911

AB Expression of the 66-kDa form of human immunodeficiency virus, type 1 **reverse transcriptase** in Escherichia coli leads to isolation of small amounts of a 2 x 66-kDa homodimer and larger amounts of a heterodimer form of the enzyme in which the 66-kDa protein is complexed with its carboxyl-terminally truncated is complexed with its carboxyl-terminally truncated 51-kDa form. The latter arises via proteolysis by contaminating proteases. The heterodimer, which was characterized by gel filtration (apparent native molecular mass of 120-130 kDa), was the most active form of the enzyme (specific activity, 5000 **units/mg**, cf. less than 2000 for the 66-kDa fragment). The 66-kDa fragment alone was shown to be only partially dimerized, with the activity residing mainly in the dimer fraction. Proteolysis of the 66-kDa form resulting partially in the 51-kDa form led to an increase in **reverse transcriptase** activity. Expression of a truncated version of the protein containing the first 428 amino acids of the **reverse transcriptase** coding region led to a protein which had low but measurable **reverse transcriptase** activity (400-500 **units/mg**). Co-expression of the two proteins on a single plasmid led to expression in a 1:1 ratio. The 1:1 mixture behaved as a heterodimer, as shown by its chromatographic properties. It is likely that the mechanism for the production of heterodimers in vivo involves cleavage of 66-kDa monomers followed by rapid dimerization of the 51- and 66-kDa forms to give the heterodimeric form, which is stable toward further proteolysis.

L11 ANSWER 5 OF 11 LIFESCI COPYRIGHT 2001 CSA
ACCESSION NUMBER: 89:42512 LIFESCI
TITLE: Co-expression of the subunits of the heterodimer of HIV-1 **reverse transcriptase** in Escherichia coli

AUTHOR: Mueller, B.; Restle, T.; Weiss, S.; Gautel, M.; Sczakiel, G.; Goody, R.S.
CORPORATE SOURCE: Abt. Biophys., Max-Planck Inst. Med. Forsch., Janhnstr. 29, 6900 Heidelberg, FRG

SOURCE: J. BIOL. CHEM., (1989) vol. 264, no. 24, pp. 13975-3978.
DOCUMENT TYPE: Journal
FILE SEGMENT: V; N
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Expression of the 66-kDa form of human immunodeficiency virus, type 1 **reverse transcriptase** in Escherichia coli leads to isolation of small amounts of a 2 x 66-kDa homodimer and larger amounts of a heterodimer form of the enzyme in which the 66-kDa protein is complexed with its carboxyl-terminally truncated 51-kDa form. The latter arises via proteolysis by contaminating proteases. The heterodimer, which was

characterized by gel filtration (apparent native molecular mass of 120-130
kDa), was the most active form of the enzyme (specific activity, 5000 **units/mg**, cf. <2000 for the 66-kDa fragment). The 66-kDa fragment alone was shown to be only partially dimerized, with the activity
residing mainly in the dimer fraction.

L11 ANSWER 6 OF 11 HCAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1987:63587 HCAPLUS
DOCUMENT NUMBER: 106:63587
TITLE: Purification of **reverse transcriptase**
INVENTOR(S): Noda, Akihiro; Mukai, Hiroyuki; Ohayashi, Akira
PATENT ASSIGNEE(S): Takara Shuzo Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 61212284	A2	19860920	JP 1985-55167	19850319

AB During purifn. of **reverse transcriptase** from a RNA tumor virus, the ext. is subjected to gel filtration high-speed liq. chromatog. for purifn. Thus, an ext. from Rous-assocd. 2 virus was chromatographed on DEAE-Trisacryl M, subjected to high-speed liq. chromatog. using TSK Gel 3000 SWG, and treated with PEG 2000 for concn. to
give purified **reverse transcriptase** with sp. activity of 74,400 **units/mg**.

L11 ANSWER 7 OF 11 HCAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1982:594918 HCAPLUS
DOCUMENT NUMBER: 97:194918
TITLE: Studies on the purification and the reverse transcription activity of E. coli DNA polymerase I
AUTHOR(S): Cai, Faxing; Yu, Xiyuan; Zhang, Guiqin; Cheng, Zhenqi;
Wei, Xiping; Zhao, Pi
CORPORATE SOURCE: Inst. Microbiol., Acad. Sin., Beijing, Peop. Rep. China
SOURCE: Shengwu Huaxue Yu Shengwu Wuli Jinzhan (1982), 44, 37-40
CODEN: SHYCD4
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB DNA polymerase I (I) was isolated and purified from sonicated Escherichia
coli B cells by (NH4)2SO4 pptn., and DEAE-cellulose 52, cellulose phosphate P-70, and hydroxylapatite column chromatog. in 8% yield. The
specific activity of the purified I was increased from 209 **units /mg** (following (NH4)2SO4 pptn.) to 3000 **units/ mg** after the hydroxylapatite column chromatog. The purified I prepn. did not show RNase activity. I activity was inhibited by 91% in
the presence of actinomycin D and was inhibited by 87% when dGTP, dCTP, or
dTTP was omitted from the reaction mixt. The reverse transcription activity of the I prepn. was detd. in a 0.1 mL Tris-HCl buffer (pH 7.4)
system using poly(A) as template, oligo(dT) as primer, and [3H]TTP as substrate and incubated at 23.degree. for 45 min. The reverse transcription system was activated by divalent ions in the order: Mg2+ >
Hg2+ > Ca2+ at optimal concn. of 1-2, 6, and 7 mM, resp., whereas Ca2+ was
inhibitory. The reverse transcription activity of I was decreased when I

concn. in the system was >3 .mu.g; the decrease in the reverse transcription activity at high I concn. may have been due to the activation of the exonuclease activity of I. Thus, the E. coli I prepn. cannot be used to replace avian myeloblastosis virus **reverse transcriptase**.

L11 ANSWER 8 OF 11 HCAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1982:81758 HCAPLUS
DOCUMENT NUMBER: 96:81758
TITLE: Purification of **reverse transcriptase** from avian myeloblastosis virus (AMV)
AUTHOR(S): Qi, Defang; Pan, Tiecheng; Feng, Zongming; Qian, Bin; Yu, Weiyuan
CORPORATE SOURCE: Shanghai Inst. Biochem., Acad. Sin., Shanghai, Peop. Rep. China
SOURCE: Shengwu Huaxue Yu Shengwu Wuli Xuebao (1981), 13(3), 275-81
CODEN: SHWPAU; ISSN: 0582-9879
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB **Reverse transcriptase** was purified .apprx.600-fold from AMV. The method employed affinity chromatog. on a column of covalently linked heparin-agarose followed by concn. of the enzyme by dialysis against 50% glycerol in phosphate buffer. This procedure could be completed within 1.5 days. The purified **reverse transcriptase** showed sp. activity of 12,000 **units/mg** protein and enzyme yield of 30,000 units/g AMV, and was free of detectable DNase and RNase. Conditions affecting the enzyme activity, e.g. metal ions, template specificity, and the length of primers were also studied and discussed.

L11 ANSWER 9 OF 11 HCAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1979:134398 HCAPLUS
DOCUMENT NUMBER: 90:134398
TITLE: **Reverse transcriptase** from avian myeloblastosis virus
AUTHOR(S): Houts, G. Edwin; Miyagi, Masakazu; Ellis, Carmen; Beard, Dorothy; Beard, J. W.
CORPORATE SOURCE: Life Sci., Inc., St. Petersburg, Fla., USA
SOURCE: J. Virol. (1979), 29(2), 517-22
CODEN: JOVIAM; ISSN: 0022-538X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB From lots of 20-30 g of avian myeloblastosis virus, RNA-dependent DNA polymerase was obtained in prepns. of purity >95% by using a 2-step column chromatog. procedure employing DEAE- (DE 52) and CM-cellulose (CM 52). Yields of RNA-dependent DNA polymerase varied from .apprx.20,000 to 35,000 units/g of virus. Sp. activity of the enzyme was .apprx.35,000-60,000 **units/mg** of protein. Free of detectable RNase activity, the product exhibited a mol. wt. of .apprx.160,000, an isoelec. point of 6.5, and .apprx.2 mol of fatty acid/mol enzyme.

L11 ANSWER 10 OF 11 BIOSIS COPYRIGHT 2001 BIOSIS
ACCESSION NUMBER: 1978:184734 BIOSIS
DOCUMENT NUMBER: BA65:71734
TITLE: TERMINAL DEOXY RIBO NUCLEOTIDYL TRANSFERASE EC-2.7.7.31 FROM ACUTE LYMPHO BLASTIC LEUKEMIA CELLS AND PRODUCTION OF ANTI SERA.
AUTHOR(S): SIDDIQUI F A; SAHAI SRIVASTAVA B I
CORPORATE SOURCE: GRACE CANCER DRUG CENT., ROSWELL PARK MEM. INST., BUFFALO,

N.Y. 14263, USA.
SOURCE: BI[redacted]M BIOPHYS ACTA, (1978) 517 (1 50-157.
CODEN: BBACAQ. ISSN: 0006-3002.
FILE SEGMENT: BA; OLD
LANGUAGE: English
AB Terminal deoxyribonucleotidyl transferase (nucleosidetriphosphate:DNA deoxynucleotidylexotransferase, EC 2.7.7.31) was purified from blast cells of a patient with acute lymphoblastic leukemia. The purified enzyme had a specific activity of 31,902 **units/mg** of protein (1 unit equals 1 nmol of Mn2+ dGTP used on dA12-12 initiator in 1 h) and gave a single protein band on polyacrylamide gel electrophoresis under nondenaturing conditions. In the native state the molecular weight of the enzyme is between 32,000 and 34,000 as determined by glycerol gradient centrifugation and Sephadex G-200 column chromatography. On sodium dodecyl sulfate-polyacrylamide gel electrophoresis it gave 2 bands, 1 corresponding to a subunit of MW 28,000 and the other to 8500. Antiserum to purified enzyme was prepared in rabbits, using terminal deoxyribonucleotidyl transferase crosslinked to bovine serum albumin and antibody production was detected by immunodiffusion against terminal deoxyribonucleotidyl transferase and neutralization of the enzyme activity. Antibodies to terminal deoxyribonucleotidyl transferase were partially purified by 60% ammonium sulfate precipitation followed by Sephadex G-200 chromatography. This antibody preparation inhibited, in vitro, the activity of the enzyme from the above cells, as well as that from other leukemic cells and calf thymus but it did not inhibit DNA polymerases .alpha., .beta. and .gamma. from any of these sources or **reverse transcriptase** from simian sarcoma virus. Terminal deoxynucleotidyl transferases from calf thymus and human leukemic cells resemble each other in subunit composition and antibody specificity.

L11 ANSWER 11 OF 11 MEDLINE DUPLICATE 4
ACCESSION NUMBER: 77022084 MEDLINE
DOCUMENT NUMBER: 77022084
TITLE: HeLa cell DNA polymerase gamma: further purification and properties of the enzyme.
AUTHOR: Knopf K W; Yamada M; Weissbach A
SOURCE: BIOCHEMISTRY, (1976 Oct 5) 15 (20) 4540-8.
Journal code: A0G. ISSN: 0006-2960.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197702
AB DNA polymerase gamma has been purified over 60 000-fold from HeLa cells which contain no detectable type C viral particles. This purified enzyme shows a specific activity of 25 000 **units/mg** of protein which is comparable to the known specific activity of homogeneous preparations of human alpha and beta polymerases. The isolated enzyme shows apparent molecular weights ranging from 160 000 to 330 000 according to the method of analysis. The enzyme exhibits optimal activity for copying poly(A) in the presence of 50 mM KPO4 and 130 mM KCl and, under these conditions, copies poly(A) 20 times more rapidly than activated DNA. These assay conditions permit a clear distinction between the gamma-polymerase and DNA polymerase beta which is markedly inhibited by

phosphate at this concentration. A comparison of the copying of activated DNA, poly(dA) and poly(A) by DNA polymerases alpha, beta, and gamma under optimal assay conditions for each enzyme is presented. Studies with synthetic and natural nucleic acid templates also show the gamma-polymerase to behave differently that the **reverse transcriptases** of avian myeloblastosis virus or Rauscher leukemia virus.